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# **BACKGROUND**

On August 19, 2013, the Hurricane Sandy Rebuilding Task Force released its <u>Rebuilding Strategy</u> for the Sandy impacted region. The Rebuilding Strategy included a long-term plan for rebuilding that guides Sandy Supplemental spending to drive regional coordination and make communities more resilient to future disasters. The Rebuilding Strategy also aligns federal, state and local policies to achieve seven goals that are important to the long-term rebuilding of the region in the most economically efficient, ecologically robust and innovative ways possible. These goals are:

- Promoting Resilient Rebuilding through Innovative Ideas and a Thorough Understanding of Current and Future Risk
- Ensuring a Regionally Coordinated, Resilient Approach to Infrastructure Investment
- Restoring and Strengthening Homes and Providing Families with Safe, Affordable Housing Options
- Supporting Small Businesses and Revitalizing Local Economies
- Addressing Insurance Challenges, Understanding, and Affordability
- Building State and Local Capacity to Plan for and Implement Long-Term Recovery and Rebuilding
- Improving Data Sharing Between Federal, State, and Local Officials

The Rebuilding Strategy identified 69 specific recommendations across these broad goals as well as specific member agencies<sup>1</sup> to lead the implementation of each of them. Since the publication of the Rebuilding Strategy, these agencies have continued to work closely together to move the recommendations forward and deliver on their commitments to the region and the President.

This report includes an update on the implementation of one of the Rebuilding Strategy goals. This report is one section of a larger report that includes each of the seven Rebuilding Strategy goals and the internal efforts to improve data sharing and accountability through the Sandy Program Management Office (PMO); recommendations are grouped according to these goals. This shorter report includes background information from the original Rebuilding Strategy, identifies the relevant leading agencies<sup>1</sup>, and includes brief updates on highlighted areas of progress made since the publication of the Rebuilding Strategy through the spring of 2014. Additional Rebuilding Strategy goal reports and a report on the PMO can be downloaded individually or can all be downloaded in the full report. A full list of the Rebuilding Strategy recommendations is included in the full report as an appendix to the report. To learn more about the Task Force or the Sandy Supplemental, to read the original Rebuilding Strategy, or to see the status of the Sandy Supplemental funding, please visit the following websites:

Executive Order 13632, establishing the Hurricane Sandy Rebuilding Task Force: <a href="http://www.gpo.gov/fdsys/pkg/DCPD-201200936/pdf/DCPD-201200936.pdf">http://www.gpo.gov/fdsys/pkg/DCPD-201200936/pdf/DCPD-201200936.pdf</a>

While the Rebuilding Strategy identified specific agencies (such as the Department of Housing and Urban Development) to lead implementation, in some cases these leads have changed, or more specific subcomponents of or offices within an agency (such as the Office of Community Planning and Development) have been identified. Further, for some recommendations, the Rebuilding Strategy also identified contributing or supporting agencies. This progress report reflects the latest lead agencies only, and does not include contributing agencies, which in some cases have played a significant role to support implementation.

- Disaster Relief Appropriations Act, 2013, or "Sandy Supplemental," which provided \$50 billion in disaster relief funding to Federal agencies: <a href="http://www.gpo.gov/fdsys/pkg/PLAW-113publ2/pdf/PLAW-113publ2.pdf">http://www.gpo.gov/fdsys/pkg/PLAW-113publ2/pdf/PLAW-113publ2.pdf</a>
- The Hurricane Sandy Rebuilding Strategy, published by the Task Force on August 19, 2013: <a href="http://portal.hud.gov/hudportal/documents/huddoc?id=HSRebuildingStrategy.pdf">http://portal.hud.gov/hudportal/documents/huddoc?id=HSRebuildingStrategy.pdf</a>
- Recovery.gov Hurricane Sandy maps, for the latest status of Sandy Supplemental funds by state: <a href="http://www.recovery.gov/Sandy/whereisthemoneygoing/maps/Pages/HudPmo.aspx">http://www.recovery.gov/Sandy/whereisthemoneygoing/maps/Pages/HudPmo.aspx</a>

# REBUILDING STRATEGY GOAL: ENSURING A REGIONALLY COORDINATED, RESILIENT APPROACH TO INFRASTRUCTURE INVESTMENT

The damage from Hurricane Sandy to infrastructure in the impacted region was unprecedented in scope and cost. The damage to a region from impacts to infrastructure is not only in the cost of repair and replacement, but in the severe and cascading impacts on assets and systems, and natural resources that form the framework of our communities. Impacts to infrastructure are especially hard on the most vulnerable in our communities as they have few options when needed services are not available. The goal of the Rebuilding Strategy is to ensure the rebuilding efforts are coordinated, timely, and effective and to encourage investment in systems, assets and nature-based protective features to help the region withstand and quickly recover from future disasters.

## **Lead Agencies**

Department of Agriculture (USDA)

Department of Energy (DOE)

Department of Housing and Urban Development (HUD)

Department of Homeland Security (DHS)

Department of the Interior (DOI)

Department of Labor (DOL)

Department of Transportation (DOT)

Department of Health and Human Services (HHS)

Environmental Protection Agency (EPA)

Federal Emergency Management Agency (FEMA)

National Oceanic and Atmospheric Administration (NOAA)

National Telecommunications and Information

Administration (NTIA)

US Army Corps of Engineers (USACE)

White House National Security Staff (NSS)

White House Council on Environmental Quality (CEQ)

Office of Management and Budget (OMB)

White House Office of Science and Technology (OSTP)

### **Progress Update**

This section of the Rebuilding Strategy contains recommendations with the goal of ensuring a regionally coordinated, resilient approach to infrastructure investment. The first of these recommendations set forth a set of seven Resilience Guidelines for infrastructure projects. The seven Guidelines promote these concepts:

- Forward-looking, science-based comprehensive risk analysis
- Transparent and inclusive decision processes
- Regional coordination of resilience efforts
- Assurance of long-term efficacy and fiscal sustainability
- Environmentally sustainable and innovative solutions
- Use of targeted financial incentives

Adherence to resilience performance standards

To date, key funding agencies, EPA, DOI, DOT/Federal Transit Administration (FTA), HUD, and USACE, have incorporated the Resilience Guidelines into their funding requirements to ensure grantees build back more resiliently and are measuring the effectiveness and impact of the Guidelines for Sandy recovery. In addition, an interagency policy team is currently looking at whether the Guidelines should be applied beyond the Sandy recovery efforts. Regional coordination, an integral part of the Guidelines, is underway at the Sandy Recovery Office through the Sandy Regional Infrastructure Resilience Coordination initiative, where a regional coordination effort that has brought Federal, state and local agencies together to discuss planned projects, shared funding opportunities, the required Federal review and permitting processes, and cascading benefits and impacts in the recovery process. The development of a Hurricane Sandy best practices template will help inform future federal recovery coordination.

Other efforts are underway to encourage the use of resilient energy strategies for key assets and systems, address the nexus between power and communications, power and public transportation, and between availability of funding and needed investment in infrastructure.<sup>2</sup> Each of these teams is identifying near term and longer term actions to address these issues.

In December of 2013, FTA released a Notice of Funding Availability allocating \$3 billion in competitive grants for resiliency projects in the Sandy affected regions. The resiliency funds will be distributed to projects that reinforce the critical infrastructure necessary to support public transportation systems damaged by Hurricane Sandy. FTA's goal is to advance the best regionally coordinated projects, so taxpayers won't have to pay to restore the same transit services a second or third time.

DOT had also taken proactive steps to assist communities in preparing for, identifying infrastructure with the highest risk from, and strengthening resilience toward climate change and the potential for extreme weather events. In 2010-2011, the Federal Highway Administration (FHWA) funded 5 cities for a pilot program that conducted vulnerability and risk assessments of infrastructure to the projected impacts of global climate change. The purpose of the pilots was twofold; 1) to assist State DOTs and Metropolitan Planning Organizations (MPOs) more quickly advance existing adaptation assessment activities and 2) to assist FHWA in "test-driving" the model. Based on the feedback and lessons learned through the pilots, FHWA revised the model into the Climate Change & Extreme Weather Vulnerability Assessment Framework. One such pilot program was awarded for New Jersey DOT/North Jersey Transportation Planning Authority that studied areas in Coastal and Central New Jersey.

To provide a base of scientific evidence for health officials, community members and leaders as they make decisions about health and social services, HHS awarded dozens of grants to conduct research in impacted communities on the health system's response, health care access, mental health, the health impacts of evacuation and other health resilience issues. Findings of these studies will be shared with the communities. A team of scientists, engineers, and policy analysts are also looking at how to better utilize nature-based (green) infrastructure alternatives (such as wetlands and open space) in projects.<sup>3</sup> The team is also looking

<sup>2</sup> Energy investment refers to assets, rather than investment in the grid, and their resilient power systems, which includes combined heat and power systems (CHP), microgrids, renewable energy sources, and backup generation.

<sup>3</sup> Storm surge associated with Hurricane Sandy caused dune and beach erosion, island breaching, and transport and deposition of sediment inland (i.e., overwash) in coastal communities from New England to Florida. Coastal flooding also caused significant erosion to existing natural infrastructure, inundation of wetland habitats, removal of or erosion to coastal dunes, destruction of coastal lakes, and new inlet creation.

at storm surge protection and how to share the data from these efforts in order to know what works best in different situations, as well as show how to best pursue a mixed approach – green and gray<sup>4</sup> infrastructure elements – to achieve the best results. To achieve this, the team is working to develop a better understanding of how to value green infrastructure to account for the extra benefits it may bring in the form of cleaner air, water, habitat for commercial species or recreational opportunities.

Finally, an interagency team lead by FEMA is working with stakeholders from across government and industry to promote better and stronger building codes so that all communities can benefit from a more resilient and safe approach to development.

#### What this means for communities

Federal infrastructure investments across the Sandy-affected region and nationwide will be **better coordinated** across federal agencies and **aligned with state and local stakeholders**, meaning that projects can be **delivered more efficiently** and with **more resilient outcomes for communities**.

#### For More Information

- Learn more about FHWA's Climate Change Resilience Pilots here: <a href="https://www.fhwa.dot.gov/environment/climate\_change/adaptation/ongoing\_and\_current\_research/vulnerability\_assessment\_pilots/">https://www.fhwa.dot.gov/environment/climate\_change/adaptation/ongoing\_and\_current\_research/vulnerability\_assessment\_pilots/</a>
- Read the 2011 FHWA Coastal and Central New Jersey Pilot Study Report here: <a href="http://www.njtpa.org/Planning/Regional-Studies/Recently-Completed-Studies/Vulnerability-and-Risk-Assessment-of-NJ-Transporta/FHWAConceptualModel/CCVR\_REPORT\_FINAL\_4\_2\_12\_ENTIRE.aspx">http://www.njtpa.org/Planning/Regional-Studies/Recently-Completed-Studies/Vulnerability-and-Risk-Assessment-of-NJ-Transporta/FHWAConceptualModel/CCVR\_REPORT\_FINAL\_4\_2\_12\_ENTIRE.aspx</a>
- Read FTA's 2011 Flooded Bus Barns and Buckled Rails Report here: <a href="http://www.fta.dot.gov/documents/FTA\_0001\_-\_Flooded\_Bus\_Barns\_and\_Buckled\_Rails.pdf">http://www.fta.dot.gov/documents/FTA\_0001\_-\_Flooded\_Bus\_Barns\_and\_Buckled\_Rails.pdf</a>

<sup>4</sup> Green and Gray Infrastructure are terms used to differentiate between the integration of natural systems and processes (such as wetlands) or engineered systems that mimic natural systems (such as artificial reefs) which are known as "green infrastructure" and more traditional built systems (such as concrete culverts and flood walls) which are known as "gray infrastructure."

# INFRASTRUCTURE RECOMMENDATIONS FROM THE HURRICANE SANDY REBUILDING STRATEGY

Infrastructure: Ensuring a Regionally Coordinated, Resilient Approach to Infrastructure Investment

- 1. Apply Infrastructure Resilience Guidelines to all Federal infrastructure investments and projects for Sandy recovery.
- 2. Consider applying the Infrastructure Resilience Guidelines nationally.
- 3. Federal, State, and local agencies should continue to coordinate Sandy recovery infrastructure resilience projects.
- 4. Institutionalize regional approaches to resilience planning in the NDRF and the National Mitigation Framework.
- 5. Establish a Sandy Regional Infrastructure Permitting and Review Team that leverages the Executive Order 13604 framework for Sandy projects.
- 6. 9. Leverage the Executive Order 13604 framework to identify opportunities to expedite and improve other types of review processes through programmatic agreement or consultation where appropriate.
- 7. Disaster recovery efforts should account for the temporary staffing needs of Federal agencies and State and local governments who conduct reviews and permitting of Federal disaster recovery projects.
- 8. Provide technical assistance to States and localities to help optimize Sandy recovery infrastructure funding, share best practices, leverage resources, advance sustainability, and meet the needs of vulnerable communities.
- 9. Ensure that Sandy recovery energy investments are resilient.
- 10. Mitigate future impacts to the liquid fuels supply chain like those experienced during the Sandy recovery.
- 11. Encourage Federal and State cooperation to improve electric grid policies and standards.
- 12. Mobilize the private sector and non-profit community to develop innovative solutions that support and integrate whole community efforts for disaster relief.
- 13. Develop a resilient power strategy for wireless and data communications infrastructure and consumer equipment.
- 14. Expedite flow of Sandy transportation funding to needed repairs.
- 15. Align Sandy transportation funding expenditures with national policy goals.
- 16. Consider green infrastructure options in all Sandy infrastructure investments.
- 17. Improve the understanding and decision-making tools for green infrastructure through projects funded by the Sandy Supplemental.
- 18. Create opportunities for innovations in green infrastructure technology and design using Sandy funding, particularly in vulnerable communities.

- 19. Develop a consistent approach to valuing the benefits of green approaches to infrastructure development and develop tools, data, and best practices to advance the broad integration of green infrastructure.
- 20. Ensure Sandy recovery water infrastructure investments are timely, resilient, sustainable, and effective.
- 21. Ensure Sandy recovery water infrastructure projects are coordinated with other infrastructure investments.
- 22. States and localities should adopt and enforce the most current version of the IBC and the IRC. (IBC: International Building Code; IRC: International Residential Code)

